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Evaluation Report

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DEVELOPMENT OF ECTOMYCORRHIZAE ON YELLOW BIRCH FROM THE EVELETH NURSERY, MINNESOTA

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Root systems of one-year-old yellow birch seedlings at the Eveleth Federal Nursery were examined for ectomycorrhizae. These ectomycorrhizae have been shown to increase the absorbing surface area of the roots, enable the seedlings to obtain bound nutrients, increase root longevity and resistance to certain root pathogenic fungi.

The average percentage of yellow birch feeder roots with ectomycorrhizae was determined by selecting 80 trees at random from 2 beds in the nursery, selecting a 10 percent root sample from sequential sampling of the seedlings and counting the number of feeder roots with ectomycorrhizae on each seedling. The roots were cleared, stained and destained to distinguish the mantle. Soil samples were collected and analyzed for pH, potassium and phosphorus.

RESULTS

All of the seedlings examined had some ectomycorrhizae. An average of 76.0 percent (SE$\pm$ 1.9) of the feeder roots were ectomycorrhizae on each birch seedling examined.

The soils analysis revealed a pH of 6.1, phosphorus (P_2O_5) of 200 + lbs/acre and potassium of 160 lbs/acre.

ADDITIONAL OBSERVATION

Yellow birch ectomycorrhizae seems to be able to grow under fertility rates which seem to inhibit development of ectomycorrhizae in red pine.

CONCLUSION

The development of ectomycorrhizae on the yellow birch at Eveleth is adequate. No change in cultural techniques is necessary.

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